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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,533	02/17/2004	Koshi Hatakeyama	1232-5286	2432
27123	7590	04/05/2006	EXAMINER	
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			SEVER, ANDREW T	
			ART UNIT	PAPER NUMBER
			2851	
DATE MAILED: 04/05/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/781,533	<b>Applicant(s)</b> HATAKEYAMA ET AL.	
	<b>Examiner</b> Andrew T. Sever	<b>Art Unit</b> 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,8-12 and 14-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8-12 and 14-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/6/2006 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 4, 5, 8-12, and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deter et al. (US 5,822,022) in view of Flint (US 6,351,324) and Baba et al. (US 6,626,542.)

Deter teaches in figure 1 a scan type display optical system comprising:

An optical scanning device which includes a mirror that is rotated (clearly mirror 40 rotates as shown by the arrows above it) to deflect and scan light;

A mechanism which supports and rotates the optical scanning device (this was obvious to those of ordinary skill in the art at the time the invention was made, for example part 40 shows two bars that would form an axle which as those with ordinary skill in the art would recognize, these axles would be attached to a motor that would inherently have to be mounted somehow to support them (mirrors and motors do not have the ability to levitate in mid air) see Flint which in figure 2 teaches a mechanism for supporting mirrors (254 and 240)); and

A projection optical system (34),

Wherein an incidence range of the deflected and scanned light to a first optical surface on which the light is incident initial out of the plurality of optical surfaces is variable by rotating the optical scanning device through the mechanism (this is how scanning optical systems inherently work, they scan an image across a optical

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surface by changing the incidence range; see columns 1 and 2 starting at line 55 of column 1.)

Deter teaches a refractive projection optical system rather than an at least partially reflective system. Baba et al. teaches such a system in figures 1-5 (different embodiments). Baba teaches in column 2 lines 35-52 that reflection type projection optical systems have the advantage over refractive system as taught by Deter in that they have less distortion and chromatic aberration. They are also cheaper/easier to make. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a reflective projection optical system in the scan type display optical system of Deter as taught by Baba in which the plurality of optical surfaces making up the reflective projection optical system as taught by Baba would project the light deflected and scanned by the optical scanning device as taught by Deter as such a projection system (that taught by Baba) is cheaper/easier to make than that taught by Deter.

*With regards to applicant's claim 2:*

See above.

*With regards to applicant's claim 4:*

As can be seen in figure 1 of Deter the rotating optical member which is the optical scanning member (40) as is claimed in applicant's claim 5, rotates the incidence light

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about an entrance pupil of the projection optical system (the entrance pupil is the square outline on the projection lens.)

*With regards to applicant's claim 5:*

See above with regards to applicant's claim 1.

*With regards to applicant's claim 8:*

Baba teaches curved surfaces making up the reflective surface.

*With regards to applicant's claim 9:*

See column 2 line 20-28 of Baba which teaches that the reflective surface have rotationally asymmetric aspheric shape (a free-form is not spherical so it is therefore aspherical.)

*With regards to applicant's claim 10:*

Deter teaches a second mirror (38) for deflecting the light in a direction orthogonal to the first direction.

*With regards to applicant's claims 11 and 12:*

See column 7 line 55 through column 8 line 28 of Deter. The modulators (22) are positioned prior to the scanning mirror (40), and therefore they guide modulated light to the mirror.

*With regards to applicant's claim 14:*

A controller is present (42 for example) for controlling the optical scanning device. As stated in column 7 lines 25-44 it receives image signals in a variety of formats and resolutions, which can include a change of projection range (wide screen versus standard for example).

*With regards to applicant's claim 15:*

See above (claim 1) the device that rotates the mirror is the axel while the motor (as taught by Flint) is the mechanism that rotates the device.

*With regards to applicant's claim 16:*

See above with regards to applicant's claims 11 and 12.

*With regards to applicant's claim 17:*

See above. Each line of the image is a two-dimensional image (it is at least a pixel wide) and as the scanning device scans the location of the currently displayed image is shifted.

*With regards to applicant's claim 18:*

See above with regards to applicant's claims 11 and 12.

*With regards to applicant's claim 19:*

See above.

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*With regards to applicant's claim 20:*

Mirrors 24 and 28 serve as a means for guiding light to the scanning mirror 40 (and 38).

It would have been obvious to place the exit pupil at the scanning mirror since this is the direction the light is to travel.

*With regards to applicant's claim 21:*

See with regards to applicant's claims 11 and 12.

### ***Response to Arguments***

5. Applicant's arguments filed 3/6/2006 have been fully considered but they are not persuasive. Applicant argues that Deter lacks a mechanism, which supports and rotates the optical scanning device. While this is true that Deter does not specifically disclose such a device, it is well known in the projection arts that a scanning mirror such as that taught by Deter and controlled by Deter's controller (see column 8 lines 50-67 for example), would require a motor and a support device for said motor and mirror. Such a teaching has been taught by Flint. Further applicant acknowledges on page 9 last paragraph that Deter and Flint teach an optical system comprising a mirror that is rotated to deflect and scan light and a mechanism which supports and rotates the mirror. Since applicant defines the optical scanning device in claim 1 as being a device having a mirror that is rotated; applicant has essentially acknowledged that Deter and Flint combined teach all of the limitations of claim 1 associated with the optical scanning device and support mechanism. Accordingly applicant's argument is not found persuasive.



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Since this is the only argument presented by applicant with regards to all claims; the rejections have been repeated and modified to reflect applicant's new language.

The double patenting rejection has been withdrawn as the motivation to combine Deter and Sunage is questionable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AS

**William Perkey**  
**Primary Examiner**